Ashland Canal Questions from Councilors and a couple others

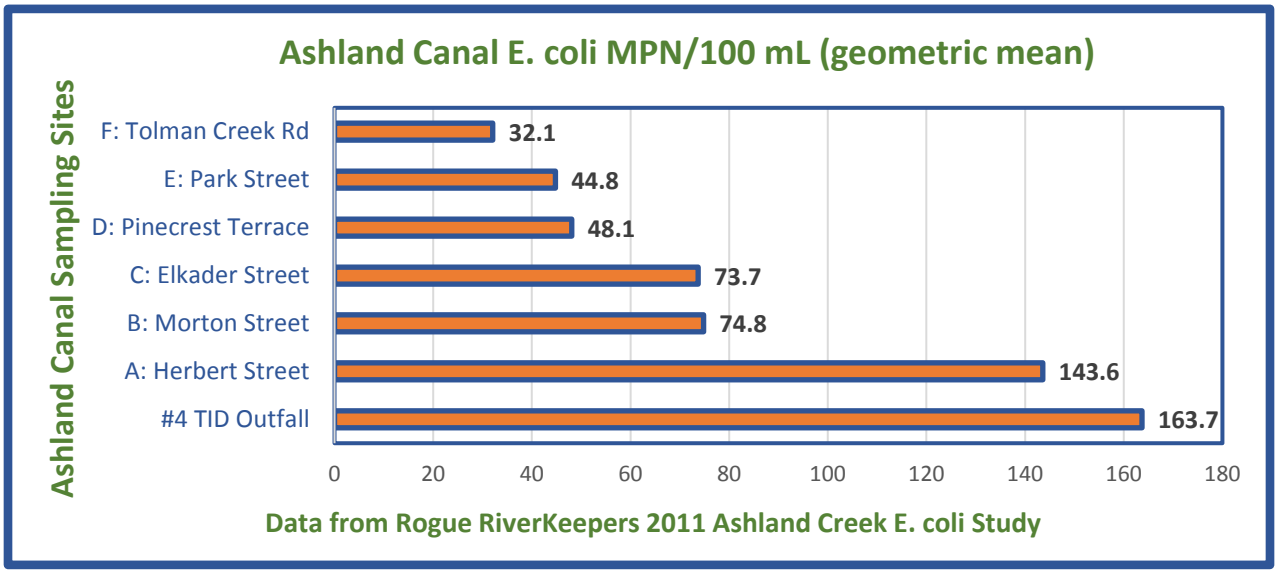
1. It looks like TID is still our preferred backup for drinking water over the Medford source (Talent Ashland Phoenix intertie TAP) because it is cheaper to buy raw water for our treatment facility than it is to buy treated water from Medford. Is that correct and what is the difference in cost? How much have we used for drinking water over the last five years or so?

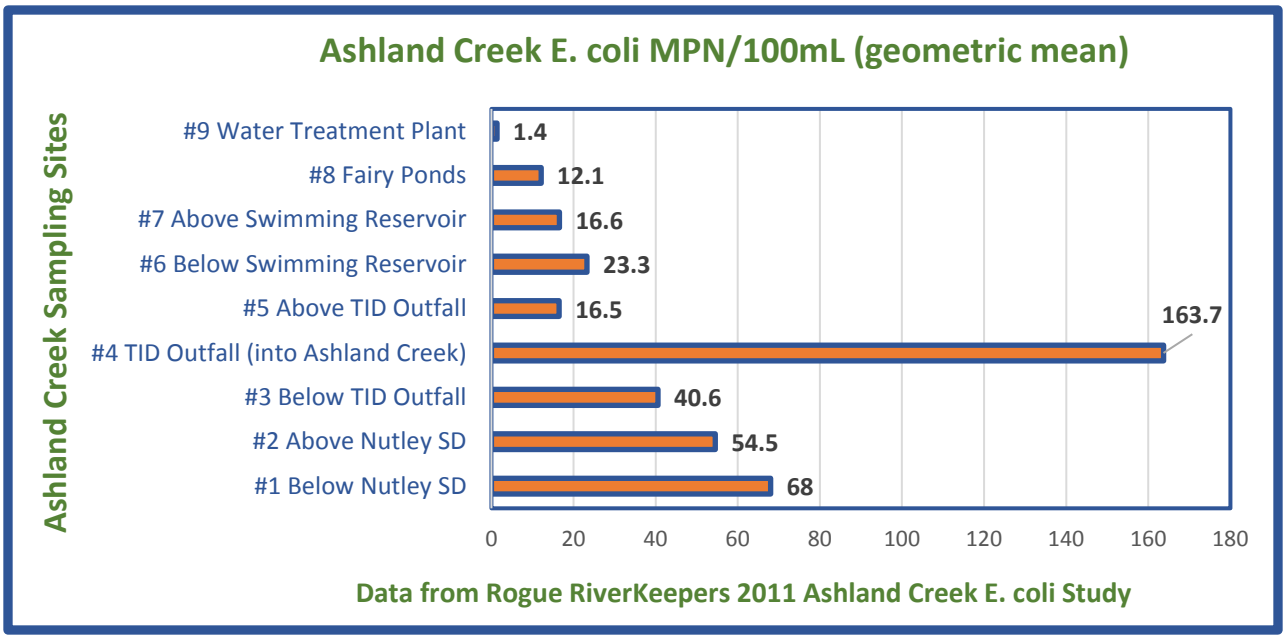
Yes, we supplement our drinking water first with TID water as allowed by the municipal uses of the TID and the much lower costs. We purchase TID water for $.20 per 1000 gallons, however when the pumping and treatment costs are added, the total TID water cost is $0.40 per 1000 gallons. Our costs for TAP water delivered into our system are $1.15 per 1000 gallons. Since 2009 we have pumped 457 million gallons of TID water and 176 million gallons of TAP. In addition, TAP is classified as an emergency water source. Our use of TAP at this point has only been for system evaluation and testing, not for emergency use. TAP is still considered an emergency source only.

2. Is temperature a problem at the Ashland Canal outfall in Ashland Creek? Are we collecting data to track that?
We are not aware of any temperature studies for the canal outfall. The Parks Department likely has some data from their E. coli sampling that includes temperature, but likely not collected for a temperature study for the Canal outfall.

3. Is there an E-coli threshold below which we are not experiencing a health hazard? Do we know what the baseline E-coli amount is in Ashland Creek before our canal water enters the natural stream? If our canal water did not pick up any more E-coli as it headed through town, would that be enough to keep us out of trouble in terms of health risks and signs telling people not to go in the water?

The state of Oregon health standard for E. coli in waterways is 406 MPN/100ml for single sample exceedance. The state considers waterways to be hazardous to public health when E. coli levels are above 406. Since 2013, the City has posted the swimming area of the playground in Lithia Park "unsafe to enter" 18 times. This swimming area is below the Ashland Canal outfall into Ashland Creek. The 2011 Ashland Creek E. coli Bacteria Study, available on our project website (www.ashland.or.us/ashlandcanal) goes into great detail regarding E. coli. In summary, the average E. coli concentrations in Ashland Creek just above the TID outfall are 16.5 MPN/100ml. The average E. coli concentrations just below the TID outfall are 40.6 MPN/100ml. The E. coli directly from the TID outfall averaged 163.7 MPN/100ml. While we can't control everything that enters into Ashland Creek, it's obvious that minimizing the E. coli that is contributed by the Canal will go a long way towards making Ashland Creek safe for the public.





4. It sounds like we do not meter existing Ashland customers who buy irrigation water from the City. Would this project allow us to meter those customers (plus the 800 new customers)? If so, is that cost figured into the estimate?

We do not meter the irrigation water purchased by our irrigation customers. Part of our design is to meter all connections for better accountability, and those costs are included in our estimates for the current connections. Future meters are not included as we don't know when those costs will be realized. Any future connection would be an added revenue source.

5. The memo says that it costs us around $75,000 per year to maintain it, yet more than half is in poor or fair condition. Have we been under-resourcing this work or are we at a place in the lifecycle of the canal where it's just not possible to hold it together with maintenance?

Our current Canal maintenance expenses are approximately $50,000 per year. We have been under resourcing this asset. We have been discussing piping the Ashland Canal since the adoption of the 2012 Water Master Plan. Due to the need for piping, our efforts have been focused on maintaining the canal as is and no major repairs have been scheduled. Most of the sections classified as poor/fair are in need of replacement. Every year that we do not complete the piping project or delay the construction has an incremental increase in the amount of deterioration.

6. I recall hearing a year or two ago about an update to the Water Master Plan, which I believe is the document that calls for this project. Is that plan in the process of being updated? If so, to what extent is it taking into consideration climate change and when do we expect it to be done?

The 2012 Water Master Plan originally identified the need to pipe the Ashland Canal. In 2013 Council approved the DEQ loan to complete the piping project. We are currently updating the Water Master Plan and anticipate it to be completed in June 2019. The canal piping project is a part of the new Master Plan project list. Climate change is not specifically discussed in the Water Master Plan but anticipated drought periods are planned. Piping the canal will protect the water from seeping and ensure full allocation of water is available for our residents.

7. There is a claim that maintaining the trail will create an effective fuel break, but that was put forward by the company that completed the ecological study. I would like to see an opinion from our fire department regarding the utility of this trail as a fire break - or as a means of accessing the area for firefighting in the event of a wildfire heading toward town. If it is to be used as a fire break, it will need to be maintained in a specific way. Is that part of the cost estimates for maintenance after the piping is installed?

We have received a memo from Ashland Fire and Rescue regarding this project and will forward to Council. We are planning on designing the trail so that it can be accessed by the Fire Departments' brush trucks in the event of a wildfire emergency in the area. The easement area will be maintained to allow for emergency fire and pipeline access.

8. It seems that Parks and Rec handles some amount of the dealing with the trail next to the canal. Is there any potential to work with landowners to develop easements that allow Parks and Rec to essentially manage this area as a lateral park/fuel break?

Possibly. While the Public Works Dept has not specifically asked land owners to grant additional trail access, we believe there are some opportunities for the Parks Dept and have worked with them through this process. The canal trail is listed as a priority in their planning documents. Additional trail easements need to be negotiated with the property owners that do not have specific public access easements.

9. I heard at the meeting last week that the canal is sometimes used to transport storm water. If that's the case, then climate change may require that we use the larger pipe assuming we pipe it. There was also talk about possibly doing bioswales to deal with that water. Has there been any consideration of building those bioswales into this project or would that be a separate project?

We would like to include bioswales in this project for minor amounts of storm flow, but our geotechnical report cautions against it due to soil conditions. This will be further evaluated if this project moves forward. Storm flows into the Canal were studied by our Engineers and they found the flows to be less than anticipated. This is primarily due to the fact that most of the Canal has roads upslope that redirect some of the storm flow into our storm system. This is discussed in the Preliminary Engineering Report, which can be found on our website at www.ashland.or.us/ashlandcanal.

9. Do we actually have to take out the liner? Given the access considerations and root problems, and potentially the need to create bio-swales, would it be possible/preferable to pipe, cover, and landscape the canal above ground while leaving the concrete liner and many of the trees in place?

There are several engineering/design reasons why we must remove the liner and excavate a small amount below the liner in order to pipe the Canal. Our elevations are fixed at the beginning and end of the project and it's very important that we maintain the same flow line and hydraulic characteristics we have now. Proper construction techniques require an appropriate amount of bedding/gravel to be placed below the new pipe, also requiring liner removal.

*10. In terms of the **cost**, I need to clarify a few things. It says that preliminary engineering costs have gone from 1.3 to 1.8 million. Then design, permitting, and construction has gone from 2.4 to 3.9 million. I assume these two categories are additive meaning that the total cost of the project (assuming we go with the preferred alternative costing 3.1 million) would be 4.9 million total. Is that correct or are the preliminary engineering numbers included in the estimate for design, permitting, and construction? Also, I am assuming that the 250k or so that has already been spent is included in the 1.8 million, but please correct me if I'm wrong.*

The $3.1 million estimate is to finish the design and construction of the Staff recommended piping alternative. Construction alone is $2.2 million. The $3.1 does not include costs to date ($250,000). That total is $3,350,000.

11. The message says that CIP funds are available for this, but it would help considerably to have a master CIP 20-year plan with information about how we intend to pay for these projects in hand prior to making this decision. It seems that this is heading our way later this spring, but I think we need it before this and the city hall questions get decided by the Council.

a. *There is concern in the community that CIP funds have been being stockpiled for specific projects and are now potentially going to be used for something different than what was originally intended.*

   Not true. Funds are set aside by enterprise and for specific projects.

b. *How would we likely fund this (the part not being funded by the CWSRF loan) - with a larger CWSRF loan, a bond, or our CIP budget?* Likely through a different loan agreement.

c. *Or are there other grant-based funding sources?*
   Yes, there are several opportunities well suited for this project.
   - Oregon Water Resources Department
   - Natural Resources Conservation Service
   - Oregon Watershed Enhancement Board
   - US Bureau of Reclamation

d. *It will be very hard to me to approve going forward with final engineering without at least a ballpark idea of what this will cost (including all aspects of the actual project and maintenance including the costs of repairing landscaping for homeowners) and our options for paying for it.*

   Estimates to finish the design and complete the construction are $3.35 million, costs for the restoration of neighboring properties are included.

12. I understand that the WISE project is no longer looking to pipe the rest of the irrigation canals in the valley. It seems this canal is an offshoot of the main canal and terminates in Ashland Creek. Please let me know if either of these understandings is wrong.

We are not aware of any significant changes to WISE, but are hearing that it is not on the front burner. Where to get the funding has been an obstacle for them. The Ashland Canal is fed by TID-BOR owned canals and terminates where we decide: the water treatment plant, Wright's Creek or Ashland Creek. In normal operation, our canal terminates into Wright's Creek, but there's always some spillage into Ashland Creek.

13. Do we have a legal risk of storm water - or a massive failure of the canal - flooding property owners along the canal? Is there a legal risk to the City for doing something that may decrease property values (I doubt this second one is the case, but people are talking about it so I just need to confirm).

Flooding and canal failure risks will be significantly reduced by this piping project. If the project moves forward, we will work closely with the City's legal team to address legal risks relating to property values. It is very difficult to quantify property value changes.

*14. This may seem like a strange question, but do we know how many gallons of water we are conserving annually because of our **water conservation program** and the actions residents are taking?*

Our city residents and water users have been very diligent with water conservation practices. Typical savings range between 2-4 million gallons per year. On average about 3 million gallons are conserved each year from the actions that residents are taking by participating in the water efficiency programs the City offers.

15. For the sections that are already piped, when was that piping done and what is the life expectancy of the pipe?

We don't have accurate construction records for the currently piped sections. Some are relatively newer and some are not. It's estimated that about 60% of the currently piped section have tar lined metal culverts and the rest are plastic pipe. The metal pipe is likely beyond its design life and it's known to corrode on the bottom and leak substantially. The plastic pipe appears to be in fair condition.

16. Will we be able to see the results of the questionnaire that was handed out to the participants at the meeting last week?

This information was provided to Council and is on the project webpage: Council Study Session Presentation. www.ashland.or.us/ashlandcanal

17. Can you tell me how many customers we currently serve with canal water, how much money that program brings in, and an estimate of how much water those current customers use?

This section of canal serves 99 properties and the backside of the Canal serves 86 properties. Total TID sales for FY 2018 were $64,846.23. Based on estimates from other landscapes of similar sizes, we estimate that properties are using anywhere from 30,000 - 70,000 gallons over a six-month period. It depends on how many square feet of landscaping is being watered and whether they are watering lawn, shrubs, trees or a mixture of all. This range of water use assumes at least 2,500 square feet of shrub and tree landscaping going up to 5,000 square feet of landscaping that incorporates a mixture of lawn, shrubs and trees.

18. It would also be helpful to know how many of the affected property owners are receiving irrigation water from the canal and which ones have a public use easement in place already? (In addition to the maintenance easement)

There are 19 properties within the project area that have irrigation service from the Canal. The map of the trail easements is on the project website (www.ashland.or.us/ashlandcanal). There are approximately 30 properties representing 56% of the total canal length in the project section that have trail easements in place now.

*19. My thinking is that the community would like to have an unimpeded **trail** along the canal whether it gets piped or lined and I'm wondering if there could be some packages created where we offer hook ups and/or some amount of irrigation water in exchange for public use easements in the areas where the City does not already have them. If we did that, people could decide to water some of the trees that are in danger of dying once the pipe is installed*.

Interesting policy question for council, additional public trail easements need to be negotiated with property owners.

20. I'm also wondering if it would be possible to get Parks and Rec involved in funding the acquisition of the public use easements. If there is a way to avoid some of the tree death by spending a bit more money on different installation techniques, Parks and Rec might be able to help with that if the end result is a continuous "canal" trail.

Parks would love to have this and be involved, additional public trail easements must be negotiated with individual property owners.

21. Lastly, you have probably already thought about this, but would it be possible to lay the new pipe above the current canal rather than digging out all of the concrete? Any chance we could build it up and mound over it with soil rather than digging down? Seems that might avoid the tree root problem and provide easier access for future repairs.

This was addressed in the engineering reports available on the project website (www.ashland.or.us/ashlandcanal) and with question #9 in this document. The new pipe has fixed points at the beginning and end of the project and is generally flat in elevation. It's very important that we maintain the current flow line and hydraulic characteristics of the current canal, the whole system is gravity fed and is a driving factor for engineering/design.

22. I'm not clear on what the 62,000,000 gallons of lost water refers to. Is this from the 2 miles proposed to be piped or the part of the canal operated by the city, or the total 17 miles of the Ashland canal? Can you clarify what this statistic refers to?

That is the estimated amount of water lost through seepage and evaporation in a typical irrigation season from the 2 miles of canal in the project area.

23. What is the current amount spent annually on maintenance of the project section of the canal? How much is spent on whole section operated by the city?

The City spends approximately $50,000 on annual maintenance for the whole canal. The City maintains this 2-mile section and the "back" side which is another 2 miles in length. These costs are for the whole Canal;

24. How many current customers receive irrigation water from the city section and how much does the city currently receive in payments form those who get irrigation water from the city? How many requests has the city received asking to start get irrigation water from the city?

This section of canal serves 99 properties and the backside of the Canal serves 86 properties. Total TID sales for FY 2018 were $64,846.23. On average we get about 5 requests a year for new TID service. The last time we installed a new connection was 2016, most of the time people are asking for it where it's not available or there isn't enough capacity or they determine the costs for installation are too high.

25. Has this section of the Ashland canal been maintained to the same level as the other approximately 130 miles of TID canal?

We don't have specifics on what the TID does regarding canal maintenance. However, our Water Distribution Staff have many responsibilities, the canal is a small portion of their responsibilities.

26. Why do the 27% of the project area canal in good condition need to be piped or redone?

Much of the current canal is showing signs of failure of some type and the liner is beyond its design life of 60 years. The areas considered "good" now are likely to degrade significantly in the near term. Also, leaving some sections open will allow for contaminates to enter the canal. It's important in design that we minimize the amount of piped connections, this also reduces construction costs. Excessive pipe connections of new to old sections brings up concerns of leaks and potential failure. The most robust solution with the lowest life cycle cost is replace all sections with new pipe.

27. Do you think the 20% factor is enough of a margin for the ditch project? The 24" diameter pipe has a cross sectional area which doesn't seem like a lot for high water events. The report addresses the area of the project but much happens at the southern, open stretches of the ditch that might not be addressed and may impact the area at the transition to the piping.

Yes. Water delivery from TID is limited by their canal and hydrology. Our design includes an overflow system at the beginning and mid-point of the piped section to mitigate potential storm surges.

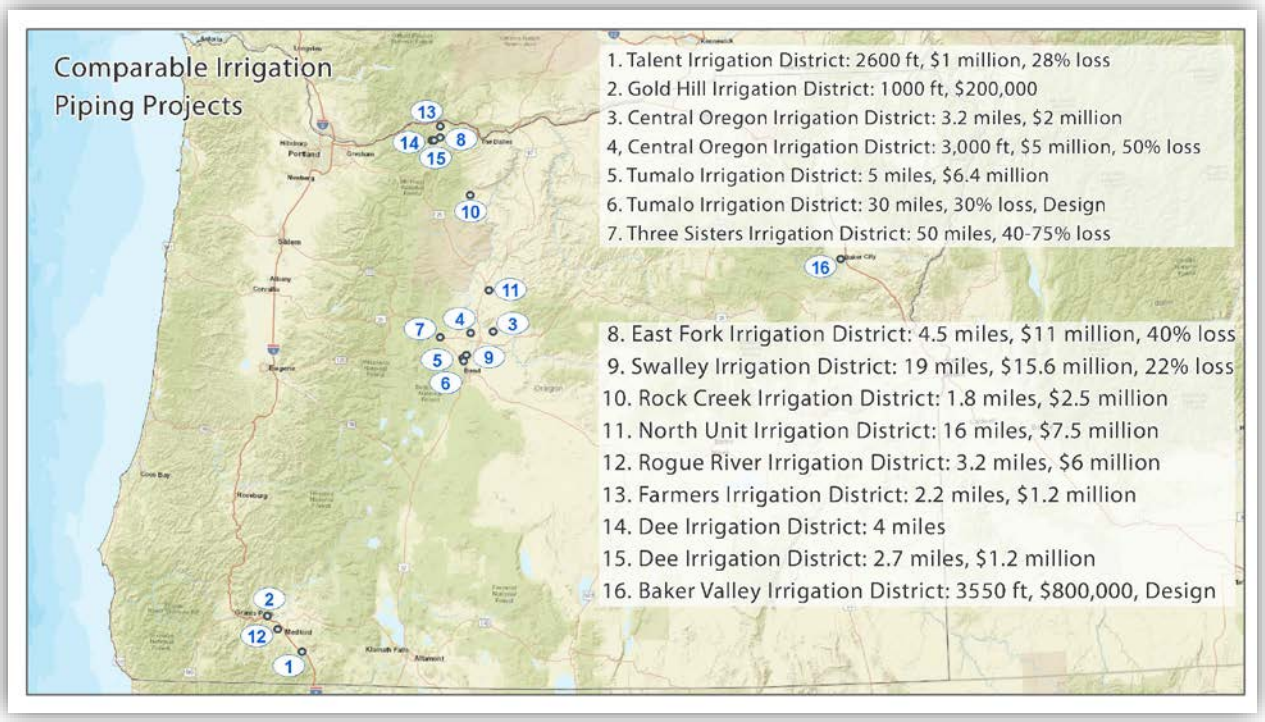
28. Over time, the ditch has come to serve storm run-off functions that may not be addressed by redirecting to the storm water collection system. I am curious if drainages like the Roca Canyon system can deal with the additional runoff.

These issues will be addressed during final design. The total storm flows are less than we realized, partly because much of the canal has a road network uphill that directs storm flows into our storm system already.

29. They are wondering whether the water rights adjudication process going on in the Klamath has any potential to affect our receipt of water in the future, particularly as it relates to native tribes in the region and their claims to water rights. Essentially, the question is should we invest significant amounts of money now when the adjudication process could eliminate the source of the water we would be transporting?

Klamath water rights final adjudication is unknown for the basin as irrigation water rights challenges began in the basin in 1975 and litigation continue today. The Oregon Water Resources Division (ORWD) is fully engaged in determining water rights and annual allocations especially during drought conditions that are dependent upon rainfall, snow melt, and groundwater in the Klamath basin. Ashland receives TID water through a water right from the Bureau of Reclamation (BOR). This is not a simple solution and the City will rely on OWRD and the BOR to determine flows and allocations.

30. They want to know if there are examples of other places where irrigation ditches have been piped. Given that TID hasn't piped their ditches yet, there seems to be some mistrust around the idea that other areas are moving toward piping rather than open topped canals.



31. There are people questioning whether the WISE project is still moving forward and whether piping is still what is wanted in the rest of the canal. From what I have heard, it still is the goal, but money is the issue. Is that correct and is there any way for the public to hear that message directly from the WISE program or TID - perhaps at the upcoming study session?

Yes, as far as we know, the WISE project it is still a goal however, securing funding for such a large project has been difficult. We have invited a WISE representative to the April 1st Study Session.